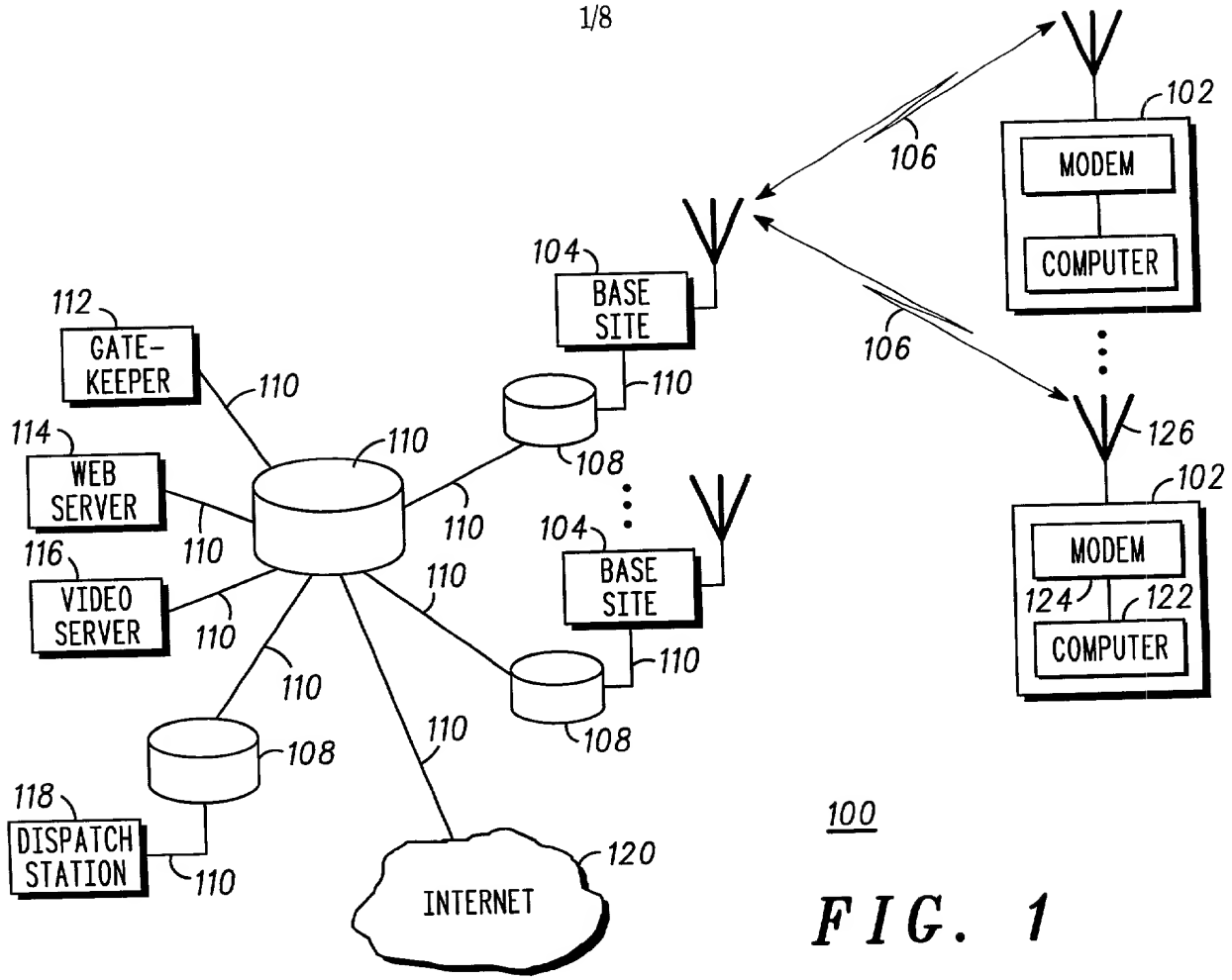

102
MODEM
COMPUTER
106
106
104
BASE SITE
112
GATE-KEEPER
110
114
WEB SERVER
116
VIDEO SERVER
108
126
102
MODEM
124
122
COMPUTER
118
DISPATCH STATION
120
INTERNET
100

FIG. 1

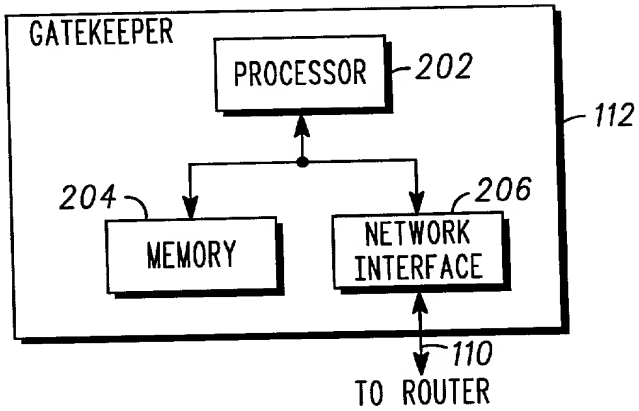

GATEKEEPER
PROCESSOR
202
112
204
MEMORY
206
NETWORK INTERFACE
110
TO ROUTER

FIG. 2

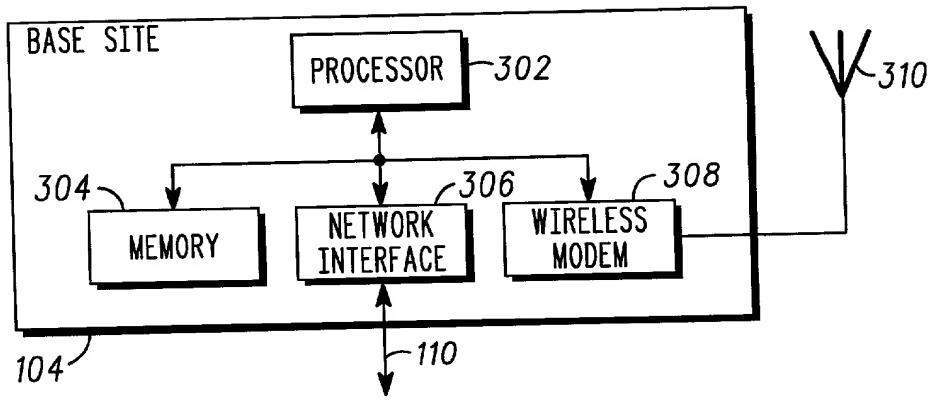

BASE SITE
PROCESSOR
302
310
304
306
308
MEMORY
NETWORK INTERFACE
WIRELESS MODEM
104
110

FIG. 3

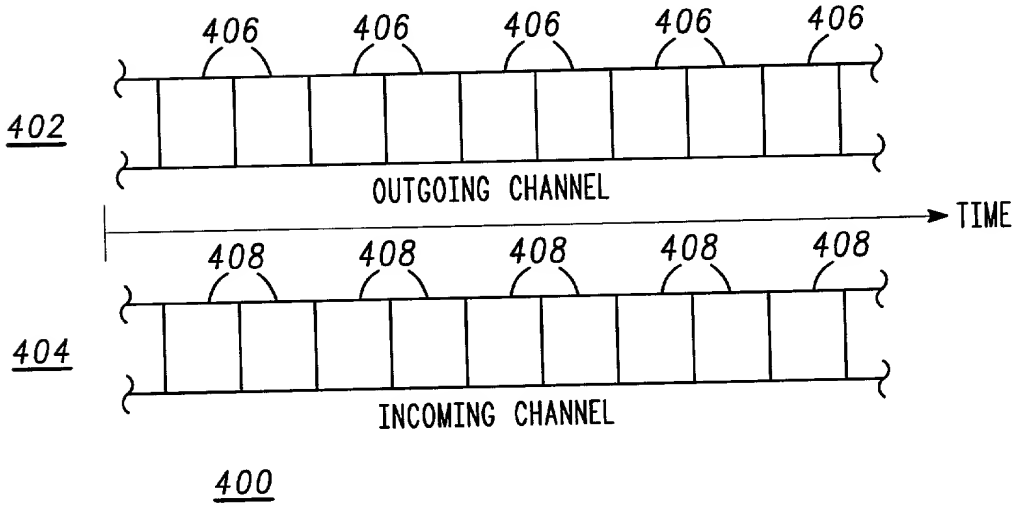

406
406
406
406
406
402
OUTGOING CHANNEL
TIME
408
408
408
408
408
404
INCOMING CHANNEL
400

FIG. 4

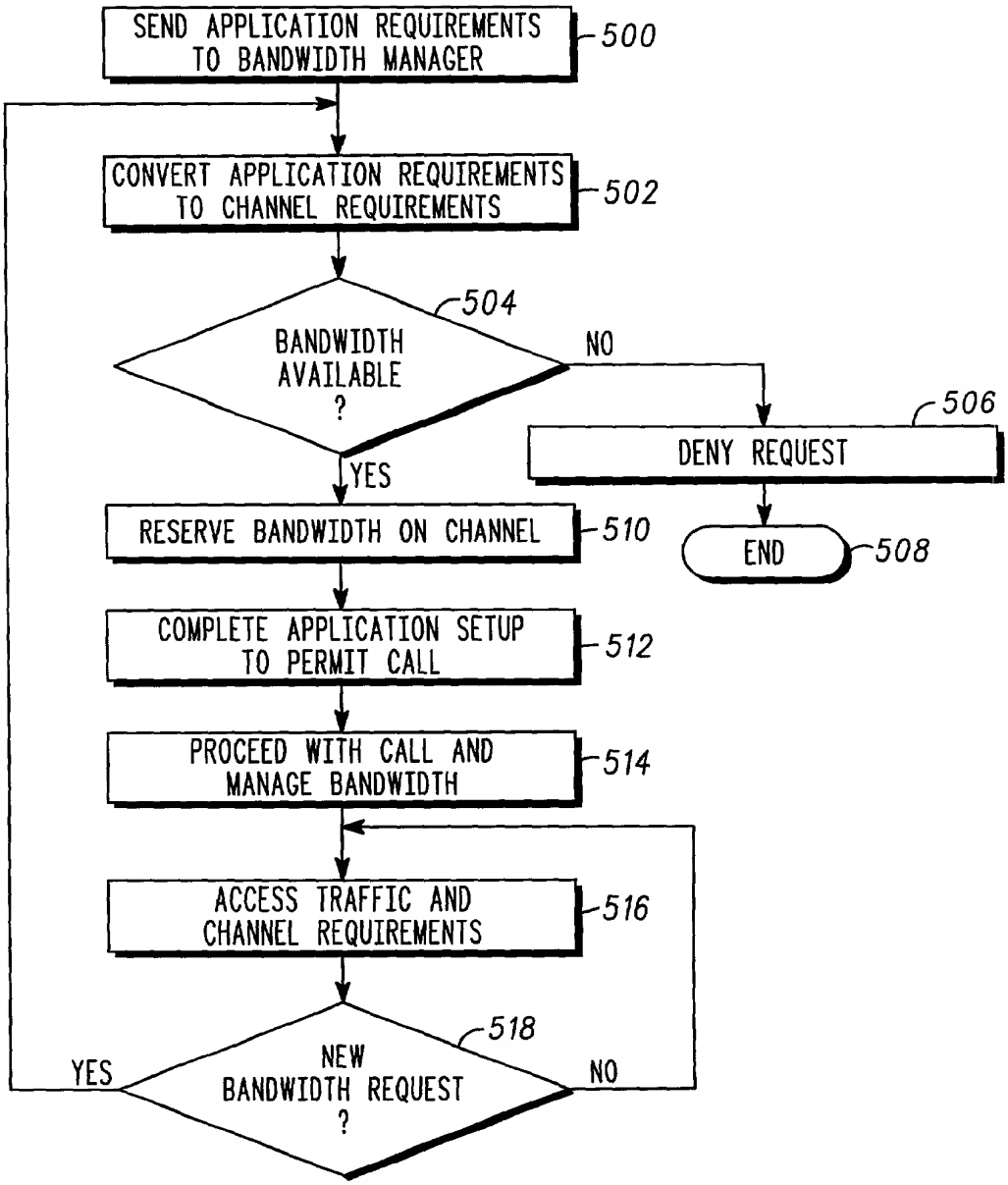

SEND APPLICATION REQUIREMENTS TO BANDWIDTH MANAGER
500
CONVERT APPLICATION REQUIREMENTS TO CHANNEL REQUIREMENTS
502
BANDWIDTH AVAILABLE ?
504
NO
DENY REQUEST
506
END
508
YES
RESERVE BANDWIDTH ON CHANNEL
510
COMPLETE APPLICATION SETUP TO PERMIT CALL
512
PROCEED WITH CALL AND MANAGE BANDWIDTH
514
ACCESS TRAFFIC AND CHANNEL REQUIREMENTS
516
NEW BANDWIDTH REQUEST ?
518
YES
NO

FIG. 5

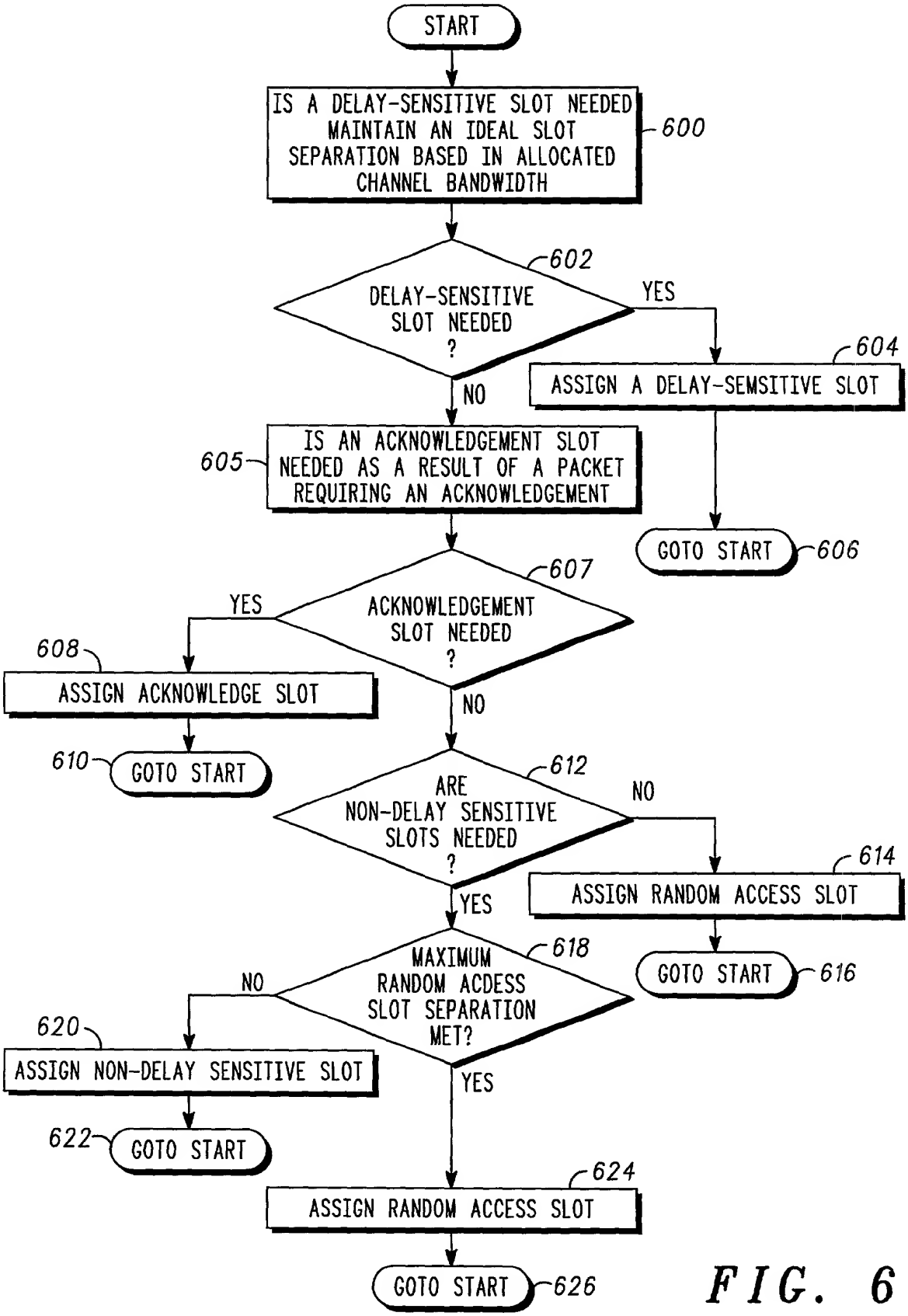

START
IS A DELAY-SENSITIVE SLOT NEEDED MAINTAIN AN IDEAL SLOT SEPARATION BASED IN ALLOCATED CHANNEL BANDWIDTH
600
DELAY-SENSITIVE SLOT NEEDED ?
602
YES
NO
ASSIGN A DELAY-SEMSITIVE SLOT
604
IS AN ACKNOWLEDGEMENT SLOT NEEDED AS A RESULT OF A PACKET REQUIRING AN ACKNOWLEDGEMENT
605
GOTO START
606
ACKNOWLEDGEMENT SLOT NEEDED ?
607
YES
NO
ASSIGN ACKNOWLEDGE SLOT
608
GOTO START
610
ARE NON-DELAY SENSITIVE SLOTS NEEDED ?
612
NO
YES
ASSIGN RANDOM ACCESS SLOT
614
GOTO START
616
MAXIMUM RANDOM ACDESS SLOT SEPARATION MET?
618
NO
YES
ASSIGN NON-DELAY SENSITIVE SLOT
620
GOTO START
622
ASSIGN RANDOM ACCESS SLOT
624
GOTO START
626

FIG. 6

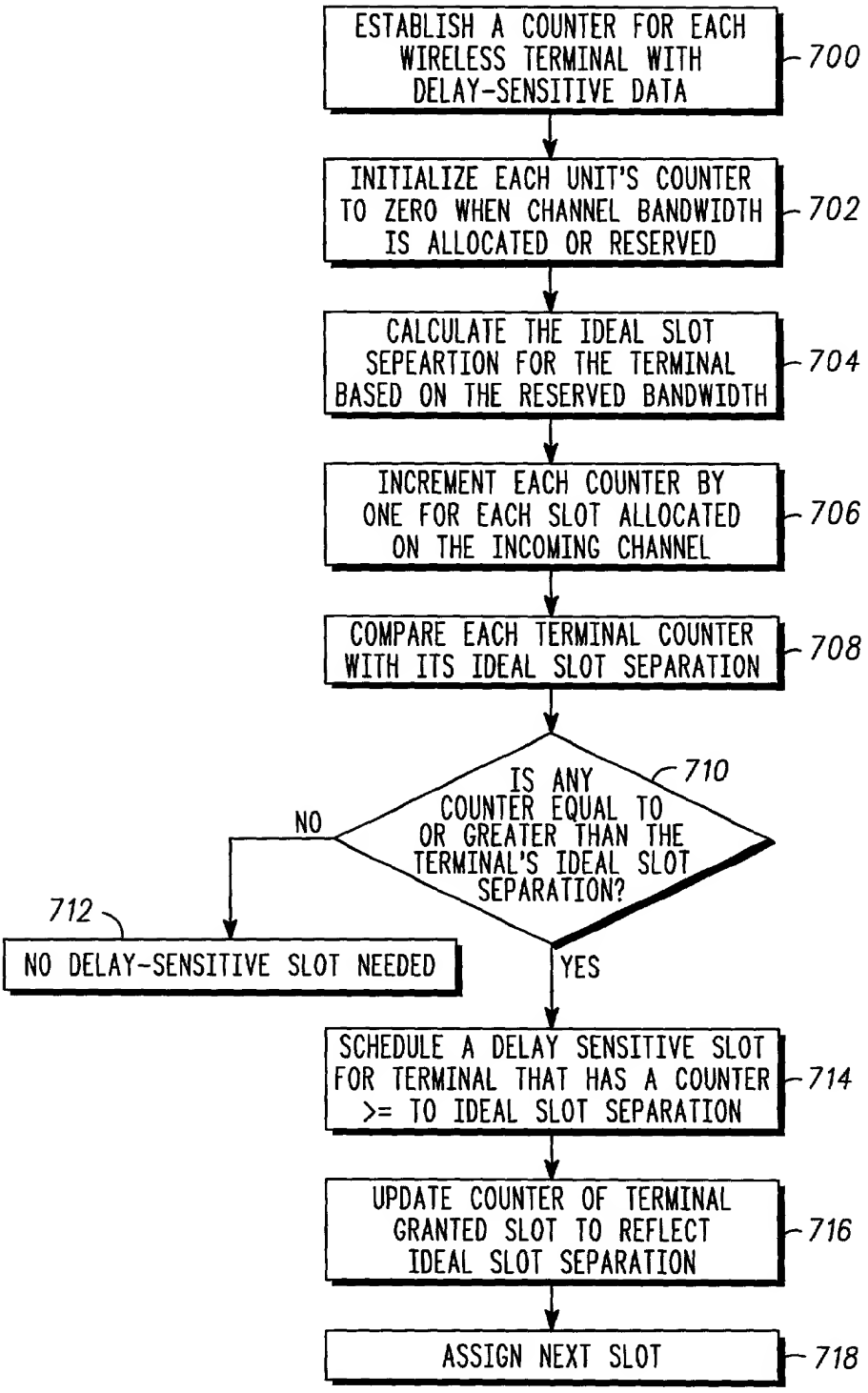

ESTABLISH A COUNTER FOR EACH WIRELESS TERMINAL WITH DELAY-SENSITIVE DATA
700
INITIALIZE EACH UNIT'S COUNTER TO ZERO WHEN CHANNEL BANDWIDTH IS ALLOCATED OR RESERVED
702
CALCULATE THE IDEAL SLOT SEPEARTION FOR THE TERMINAL BASED ON THE RESERVED BANDWIDTH
704
INCREMENT EACH COUNTER BY ONE FOR EACH SLOT ALLOCATED ON THE INCOMING CHANNEL
706
COMPARE EACH TERMINAL COUNTER WITH ITS IDEAL SLOT SEPARATION
708
IS ANY COUNTER EQUAL TO OR GREATER THAN THE TERMINAL'S IDEAL SLOT SEPARATION?
710
NO
YES
712
NO DELAY-SENSITIVE SLOT NEEDED
SCHEDULE A DELAY SENSITIVE SLOT FOR TERMINAL THAT HAS A COUNTER >= TO IDEAL SLOT SEPARATION
714
UPDATE COUNTER OF TERMINAL GRANTED SLOT TO REFLECT IDEAL SLOT SEPARATION
716
ASSIGN NEXT SLOT
718

FIG. 7

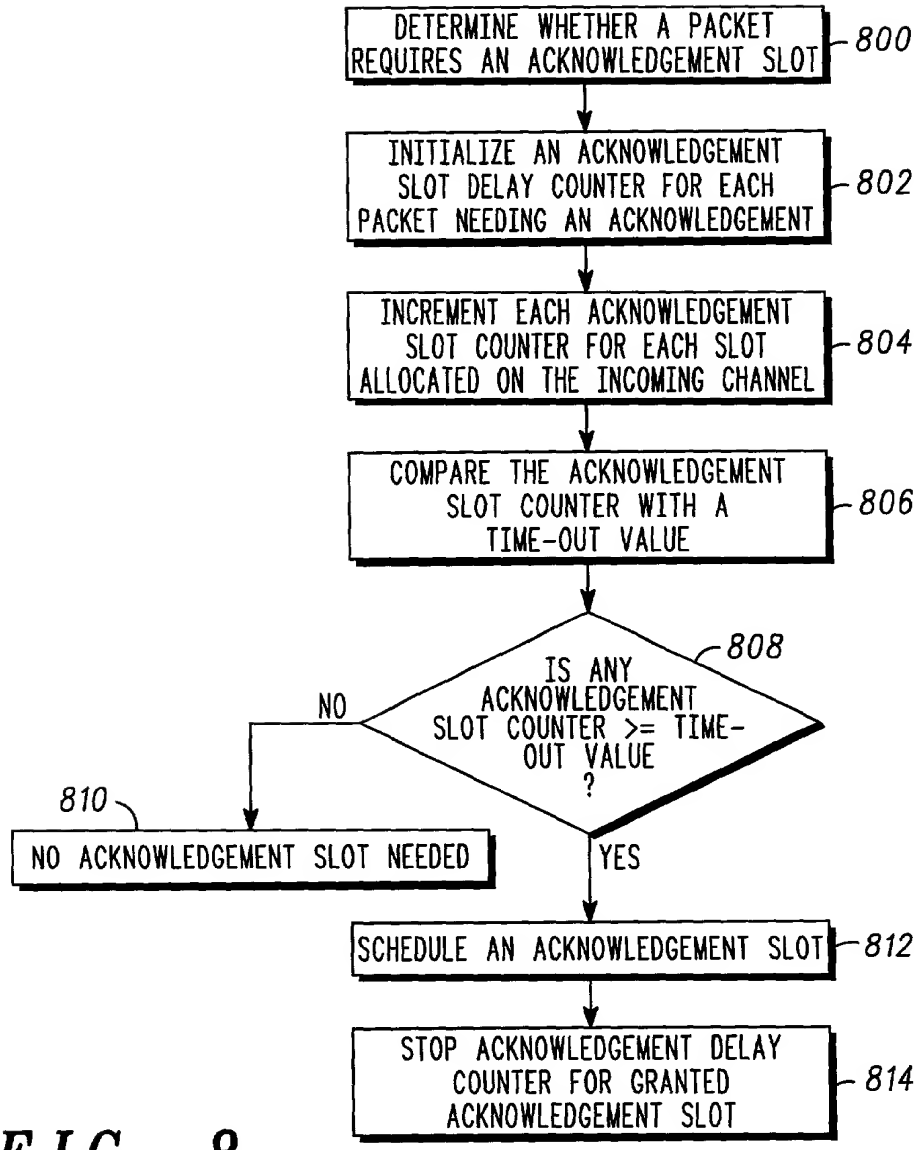
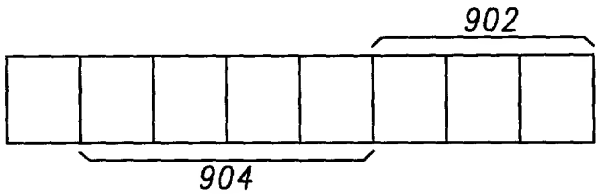


FIG. 8



900

FIG. 9

	1002 PRECEDENCE VALUE	1004 DATA TYPE	1006 EXAMPLES
1008	111	SESSION BASED CALL CONTROL	VOICE, VIDEO, CALL SETUP
1010	110	NETWORK CONTROL (ROUTER PROTOCOLS)	INTERNAL USE, MAINTENANCE VIDEO DATA
1012	101	HIGH PRIORITY TIME CRITICAL DATA	EMERGENCY VOICE AND VIDEO DATA
1014	100	NETWORK CONTROL (ROUTER PROTOCOLS)	NON-DELAY CRITICAL PACKET
1016	011	TIME CRITICAL DATA	VOICE AND VIDEO DATA
1018	010	HIGH PRIORITY DATA	EMERGENCY DATA, EMERGENCY DATABASE LOOK UP
1020	001	PRIORITY 1 LEVEL DATA	NON-EMERGENCY DATA, WEB BROWSING, DATABASE LOOK UP
1022	000	DEFAULT VALUE (BACKWARDS COMPATIBLE)	OTHER DATA

1000

FIG. 10

	1102 TOS FIELD	1104 SERVICE TYPE	1106 ERROR CORRECTION ON INCOMING AND OUTGOING CHANNEL	1108 INCOMING CHANNEL MEDIA ACCESS METHOD
1110	0000	BEST EFFORT	DEFAULT FORWARD ERROR CORRECTION	RANDOM ACCESS
1112	0001	MINIMIZE DEALY	STRONG FORWARD ERROR CORRECTION	USE RESERVED, DELAY-SENSITIVE BANDWIDTH
1114	0010	MAXIMUM THROUGHPUT	NO FORWARD ERROR CORRECTION	USE RESERVED, DELAY-SENSITIVE BANDWIDTH
1116	0100	MAXIMUM RELIABILITY	BEST COMBINATION OF FORWARD ERROR CORRECTION AND RETRANSMISSION TECHNIQUES	RANDOM ACCESS
1117	1000	MINIMIZE MONETARY COST	DYNAMICALLY SELECT ERROR CORRECTION BASE ON CHANGES AND SIGNAL LEVELS	DYNAMICALLY SELECT MEDIA ACCESS METHOD (RESERVED OR RANDOM ACCESS) BASED ON CHANGES AND SIGNAL LEVELS

1100

FIG. 11

EXPRESS MAIL NO. EV339933560

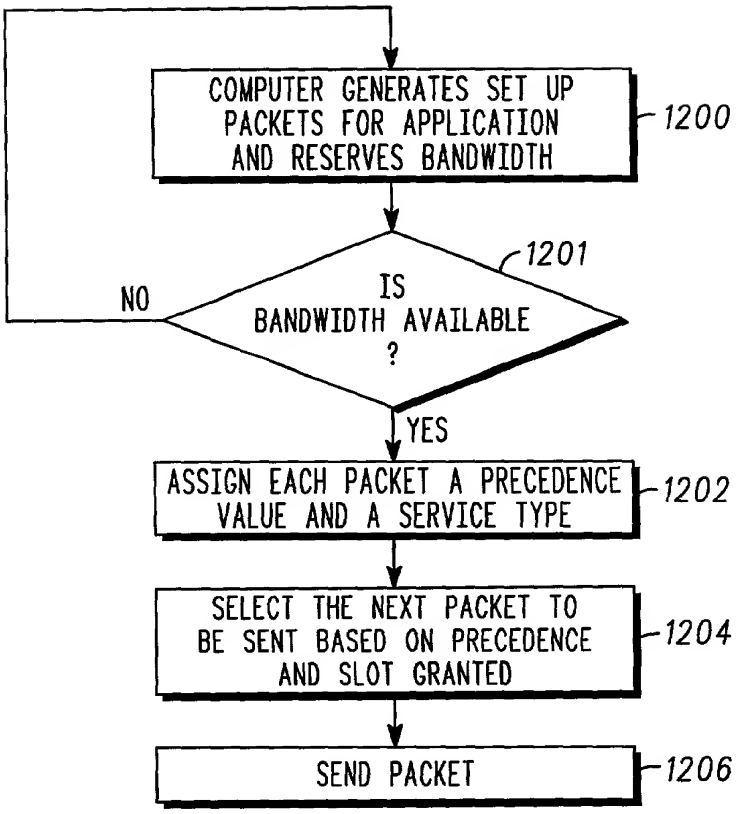

COMPUTER GENERATES SET UP PACKETS FOR APPLICATION AND RESERVES BANDWIDTH
1200
1201
IS BANDWIDTH AVAILABLE ?
NO
YES
ASSIGN EACH PACKET A PRECEDENCE VALUE AND A SERVICE TYPE
1202
SELECT THE NEXT PACKET TO BE SENT BASED ON PRECEDENCE AND SLOT GRANTED
1204
SEND PACKET
1206

FIG. 12